

REMARKS

The Applicants appreciate the thoroughness with which the subject application has been examined. By this amendment, changes have been made in the specification and certain claims to overcome the Examiner's rejections and more concisely claim and describe the present invention. Claims 1-35 remain in the application for reconsideration by the Examiner. The Examiner's allowance of all pending claims is earnestly solicited.

MATTERS RELATED TO THE CLAIMS

It is noted that the status of claim 7 is not specifically discussed. Although referred to as rejected in line 6 of the Office Action Summary, the claim is not specifically rejected or allowed in the Examiner's detailed comments regarding the application claims.

Claim 1 has been rejected under Section 102(a) as anticipated by Wu (6,720,256).

To further define the invention over the art of record, the Applicants have amended claim 1 as set forth above. In particular, claim 1 now claims, "exposing the material layer to the plasma through the opening to etch the material layer, wherein a least a portion of etched material layer is laterally disposed relative to the opening." Support for this amendment is found in the application at Figure 5 and the accompanying text in paragraph [0027].

In contrast, Wu discloses etching a silicon-containing layer 57, i.e., "[o]pening 60 in photoresist layer 59 is etch transferred through silicon layer 57 using an etch comprised of O₂ and a fluorine containing plasma or with a H₂ and fluorine containing plasma to form a structure shown in FIG. 5b." Reference to Wu's FIG. 5b reveals that the portion of layer 57 removed by the etch process is vertically aligned with the opening 60 in the photoresist layer 59. Thus the Applicant's invention as set forth in amended claim 1 is patentably distinct therefrom, since the Applicants claim, "exposing the material layer to the plasma through the opening to etch the material layer, wherein at least a portion of etched material layer is laterally disposed relative to the opening."

Wu lacks any disclosure, suggestion or inference related to, "exposing the material layer to the plasma through the opening to etch the material layer, wherein a least at portion of etched material layer is laterally disposed relative to the opening" as set forth in Applicant's amended claim 1.

Further Wu does not disclose the Applicant's step of, "maintaining the structure temperature at greater than about 100° C."

Dependent claims 2-6 and 8-14, depending either directly or indirectly from amended independent claim 1 have been rejected under Section 102(a) as anticipated by Wu (claim 3), under Section 103(a) as unpatentable over Wu (claims 2, 4-6, 9-12 and 14), under Section 103(a) as unpatentable over Wu in view of Shen (6,693,038) (claim 2) or under Section 103(a) as unpatentable over Wu in view of Lee (5,872,061) (claims 8 and 13). It is respectfully submitted that each of these dependent claims further distinguishes these inventions over the art of record in conjunction with claim 1 from which they depend.

It is further respectfully submitted that there is no reference in Wu or Shen (and Wu or Lee) that discloses, suggests or motivates combining their respective disclosures to disclose or suggest the Applicant's invention as set forth in claims 2, 4-6 and 8-14. The conjecture offered by the Examiner that the combination of Wu and Shen is permitted since, "the composition produces a good etchant material" and the combination of Wu and Lee is permitted since it, "would have been obvious to one skilled in the art to etch the claimed material through the process of etching disclosed in the primary reference specifically in circumstances involving the formation of contacts" is not dispositive of the combinability of the references according to the principles of reference combinations.

Independent claim 15 has been rejected under Section 102(a) as anticipated by Wu.

To further define the invention over the art of record, the Applicants have amended claim 15 as set forth above. In particular, claim 15 now claims, "exposing the sacrificial layer to the plasma etchant to remove regions of the sacrificial layer without compromising the integrity of the semiconductor devices, wherein at least a portion of removed regions of the sacrificial layer are laterally disposed relative to the opening." Support for this amendment is found in the application at Figure 5 and the accompanying text in paragraph [0027].

In contrast, Wu discloses etching a silicon-containing layer 57 as described above in conjunction with the rejection of claim 1. It is respectfully submitted that the Applicant's invention as set forth in amended claim 15 is patentably distinct from Wu.

Dependent claims 16-21, depending either directly or indirectly from amended independent claim 15 have been rejected under Section 103(a) as unpatentable over Wu (claims 16 and 19-21) or under Section 103(a) as unpatentable over Wu in view of Lee (claims 17 and

18). It is respectfully submitted that each of these dependent claims further distinguishes these inventions over the art of record in conjunction with claim 15 from which they depend.

Independent claim 22 has been rejected under Section 103(a) over Wu.

To further define the invention over the art of record, the Applicants have amended claim 22 as set forth above. In particular, claim 22 now claims, “forming an opening in the material layer, wherein the opening exposes a region of the sacrificial layer; and etching at least a portion of the sacrificial layer disposed laterally with respect to the opening.” Support for this amendment is found in the application at Figure 5 and the accompanying text in paragraph [0027].

Wu lacks a disclosure, suggestion or inference related to, “forming an opening in the material layer, wherein the opening exposes a region of the sacrificial layer; and etching at least a portion of the sacrificial layer disposed laterally with respect to the opening,” as set forth in Applicant’s amended claim 22. Thus the Applicant’s invention as set forth in amended claim 22 is patentably distinct from Wu.

Dependent claims 23-25, depending either directly or indirectly from amended independent claim 22 have been rejected under Section 103(a) as unpatentable over Wu. It is respectfully submitted that each of these dependent claims further distinguishes these inventions over the art of record in conjunction with claim 22 from which they depend.

Independent claim 26 has been rejected under Section 103(a) over Wu.

It is respectfully suggested that Wu lacks a disclosure, suggestion or inference related at least to, “laterally etching a portion of the first and the second sacrificial layers proximate the opening and vertically etching the bridging sacrificial material,” as set forth in Applicant’s claim 26. Thus the Applicant’s invention as set forth in this claim is patentably distinct from Wu.

Dependent claims 27-35, depending either directly or indirectly from independent claim 26 have been rejected under Section 103(a) as unpatentable over Wu (claims 27, 28 and 30-35) or as unpatentable over Wu in view of Lee (claim 29). It is respectfully submitted that each of these dependent claims further distinguishes these inventions over the art of record in conjunction with claim 26 from which they depend.

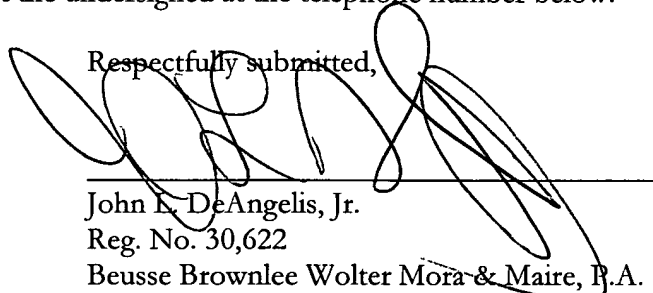
As to claim 7, depending from independent claim 1, it is respectfully submitted that this dependent claim further distinguishes the invention over the art of record, in that claim 7 further

requires, "the material layer is selected from among titanium, titanium-nitride, a titanium compound and a titanium alloy."

The Applicants have attempted to comply with all of the points raised in the Office Action and it is believed that the remaining claims in the application, i.e., 1-35, are now in condition for allowance. In view of the foregoing amendments and discussion, it is requested that the Examiner's claim rejections have been overcome. It is respectfully requested that the Examiner reconsider these rejections and objections and issue a Notice of Allowance for all the claims pending in the application.

If a telephone conference will assist in clarifying or expediting this Amendment, Examiner Abraham is invited to contact the undersigned at the telephone number below.

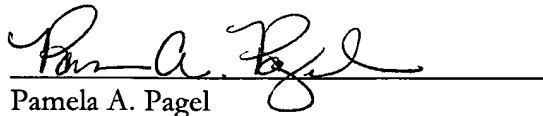
Respectfully submitted,



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CERTIFICATE OF MAILING

I HEREBY CERTIFY that this Amendment is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 23rd day of February, 2005.



Pamela A. Pagel